
Product Data Sheet

Product Name: Arachidonoyl Serinol

Cat. No.: GC18097

Chemical Properties

Cas. No. 183718-70-9

Chemical Name N-[(2-hydroxy-1-hydroxymethyl)ethyl]-5Z,8Z,11Z,14Z-eicosatetraenamide

SMILES O=C(NC(CO)CO)CCC\C=C/C/C=C\C/C/C=C\C/C=C\CCCCFormula $C_{23}H_{39}NO_3$ M.Wt 377.6Solubility $\leq 10\text{mg/ml}$ in ethanol; 10mg/ml in DMSO; 10mg/ml in dimethyl formamide Storage Store at -20°C General tips For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure **Background**

Arachidonoyl Serinol is an amide bond-containing analogue of 2-arachidonoylglycerol, exhibited only weak CB1 receptor agonistic activity. 2-Arachidonoyl glycerol (2-AG), a product of increased inositol phospholipid metabolism, is the natural endocannabinoid ligand for the CB1 receptor [1][2][3].

Cannabinoid receptor (CB1) was first identified in rat brain in 1988. N-arachidonylethanolamine (anandamide) binds to the cannabinoid receptor and exhibits various cannabimimetic activities. Anandamide inhibits calcium currents in N18 neuroblastoma cells, inhibits forskolin-stimulated adenylase cyclase activity, electrically evokes twitch response of the mouse vas deferens, and causes analgesia, hypothermia, hypoactivity, and catalepsy [3]. Anandamide acts as a weak agonist and 2-arachidonoylglycerol may be an endogenous cannabinoid receptor agonist in nervous tissues [1].

Caution: Product has not been fully validated for medical applications. For research use only.

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Replacement of the sn-2 oxygen in the glycerol moiety of 2-AG with a nitrogen atom produces Arachidonoyl Serinol. In NG108-15 cells, Arachidonoyl Serinol induced a weak elevation of $[Ca^{2+}]_i$ [1][2].

References:

- [1]. Sugiura T, Kodaka T, Kondo S, et al. 2-Arachidonoylglycerol, a putative endogenous cannabinoid receptor ligand, induces rapid, transient elevation of intracellular free Ca^{2+} in neuroblastoma x glioma hybrid NG108-15 cells. *Biochem Biophys Res Commun*. 1996 Dec 4;229(1):58-64.
- [2]. Sugiura T, Kodaka T, Kondo S, et al. Is the cannabinoid CB1 receptor a 2-arachidonoylglycerol receptor? Structural requirements for triggering a Ca^{2+} transient in NG108-15 cells. *J Biochem*. 1997 Oct;122(4):890-5.
- [3]. Khanolkar AD, Abadji V, Lin S, et al. Head group analogs of arachidonylethanolamide, the endogenous cannabinoid ligand. *J Med Chem*. 1996 Oct 25;39(22):4515-9.

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